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1	RECORD OF ORAL HEARING
2	UNITED STATES PATENT AND TRADEMARK OFFICE
3	_____
4	BEFORE THE BOARD OF PATENT APPEALS
5	AND INTERFERENCES
6	_____
7	*Ex Parte* ZIYA ARAL, RONI PUTRA, ALISTAIR D. BLACK,
8	YONJIAN REN, and WENLEI MAO
9	_____
10	Appeal 2009-006253
11	Application 09/910,662
12	Technology Center 2400
13	_____
14	Oral Hearing Held: November 19, 2009
15	_____

16 Before MAHSHID D. SAADAT, CARLA M. KRIVAK, and
17 CARL W. WHITEHEAD, JR., *Administrative Patent Judges.*
18
19 APPEARANCES:

20 ON BEHALF OF THE APPELLANTS:

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25
26   The above-entitled matter came on for hearing Thursday, November

27 19, 2009, commencing at 11:25 a.m., at the U.S. Patent and Trademark

28 Office, 600 Dulany Street, Alexandria, Virginia, before Deborah Courville, a

29 Notary Public.

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1   P R O C E E D I N G S

2   JUDGE SAADAT: Begin when you're ready. Thank you.

3   MR. TOBIN: May it please the Board, as mentioned, I'm Chris Tobin

4   and I'm here representing the Appellant and the Assignee in this case, Data

5   Core Corporation.

6   I understand today's time is limited and I'd like to discuss some of the

7   basic grounds of rejection and some of the prior art that's been relied upon.

8   We don't wish to forego any of the arguments that have been briefed and are

9   willing to discuss any and all elements of the pending Final Office Action as

10 needed.

11   The main point of discussion I'd like to hit on today is whether the

12 Examiner has erred in rejecting various claims as being anticipated under 35

13 U.S.C. 102(e) by U.S. Patent No. 6,823,336, Srinivasan, which I will call the

14 336 Patent.

15   We do have separate arguments in the Briefs for separate groups of

16 those claims and we'd like those to be treated separately. But, initially and

17 primarily, I'd like to focus on the rejection of the independent claims.

18   As a way of introducing what we're dealing with here today, I'd like to

19 initially discuss traditional mirroring versus what is done in Applicant's

20 claimed invention. In traditional mirroring, you'll take a dedicated high-

21 speed line, and you have a local storage side and a remote storage side, and

22 what you do in that traditional mirroring is you send the right transactions

23 that are intercepted on the primary side, or local side, and send those over to

24 the secondary side, or remote side. And that is essentially what you're

25 doing. You're replicating the right transactions at another location, so that

26 you end up having a disk that matches your local disk in some fashion. And

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1   there're all kinds of techniques for making that faster on the host side, or the

2   local side, or making it more efficient, by reducing the amount of data that

3   you have to send from one side to the other. But essentially that's what's

4   going on in mirroring.

5   JUDGE WHITEHEAD: Excuse me. If I can interrupt you for a

6   minute, what are you defining as write transactions?

7   MR. TOBIN: A write transactions is a disk -- a request to write to the

8   disk at the disk level. In the claims, there are I/O transactions and there are

9   write transactions. I/O transactions is the superset, if you will. Write

10   transactions -- I/O transactions could, of course, encompass read or write

11   transactions. So you're either reading from or writing to the disk, according

12   to an I/O transaction. Does that answer your question?

13   JUDGE WHITEHEAD: Yes.

14   MR. TOBIN: In Applicant's claimed invention, we have what's

15   referred to as an asynchronous mirrored storage, where we're interrupting

16   the I/O transactions of the local storage system, and then we're encapsulating

17   write transactions, and putting those into regular file system files, which

18   contain the write transactions, and then we're sending those files over to the

19   other side. And you don't have to just wire over transactions in this fashion.

20   You could use any nonproprietary communications protocol in order to get

21   these files from one side to the other.

22   JUDGE WHITEHEAD: Is the write transaction -- or, are the write

23   transactions common data or is -- I mean if I'm going to back up my -- the

24   way I was looking at it was if I'm going to back up my system, right, and I'm

25   going to back up a file, let's say, if you have jpgs or a if I have Word

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1 documents, whatever, I have in that file, when I'm backing up that file,

2 would that be considered to be backing up my write transactions as well?

3   MR. TOBIN: When you're backing up a file, is it backing up the

4 write transactions? Not necessarily. It could possibly be done in that

5 fashion. But you could take a file -- for example, if you had a file -- if you

6 had a picture of your cat, and cat.jpg, and you just took that. If you were

7 viewing it from a file level, you could take that file and then just send that

8 entire file over to some remote location and store it at that location.

9   JUDGE WHITEHEAD: Right.

10   MR. TOBIN: That file, in and of itself, does not contain the write

11 transactions themselves. We tried to bear that out in the claims, by saying

12 that we have the exact copy of the write transactions in these files that we're

13 sending from the local disk to the remote disk.

14   JUDGE WHITEHEAD: But --

15   MR. TOBIN: So while it's possible, it's not necessarily true, given

16 that -- given a presumption that you've backed something up.

17   And I think that's a major point here, is that the Examiner keeps

18 referring to this data set that is in the 336 patent, and that data set is -- I

19 would call it a convenient way to refer to the fact that it's a convenient

20 depiction that you're using to show that you've got a data set here and a data

21 set there.

22   But what the 336 patent is merely doing is this traditional mirroring,

23 where it's just sending the write transactions over the wire and then

24 performing the write transactions at the secondary side.

25   It has not provided this -- what Applicant has provided, which is a

26 very convenient way, without a high-speed, dedicated line, to get those write

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1   transactions over to the other side. So you don't need the dedicated

2   infrastructure, the high-speed line, or anything like that. You're just putting

3   them in normal file system files, and you've sequenced those write

4   transactions within these files that you've created, and you've also sequenced

5   the series of files, so that you'll have coherency on the remote side when you

6   go to recompile what has occurred.

7   JUDGE WHITEHEAD: And I don't mean to keep interrupting you,

8   but you said the 336 patent actually sends the write file or the write

9   transactions over. It mirrors it.

10   MR. TOBIN: There -- it is a disk mirroring operation.

11   JUDGE WHITEHEAD: Right, so the data set --

12   MR. TOBIN: It does send write transactions from the local to the

13 remote.

14   JUDGE WHITEHEAD: Okay.

15   MR. TOBIN: It does not intercept them and encapsulate them in file

16 system files, as we have claimed, however.

17   JUDGE SAADAT: What is the difference? I mean if the interception

18 creates a duplicate data set, or a duplicate copy, what -- does it matter if the

19 duplicate is made before transaction or after, or separately?

20   MR. TOBIN: Or concurrently.

21   JUDGE SAADAT: Or concurrently.

22   MR. TOBIN: It -- we couldn't say that that's not a duplication,

23 because it's then -- it's existing in two places. I agree with you on that.

24 What we've done is provide the convenience of providing the coherency of

25 data on the remote side in a fashion that puts them into these special files

26 that we have.

1   We're not -- going back to my example, when you're mirroring a disk,

2 and the Examiner has noted that in the 336 patent, it says you could store

3 volumes, files, whatever, you know.

4   You know, those are not the files we're talking about. We're not

5 talking about cat.jpg. We're talking about our file that we use to accomplish

6 the mirroring. So, of course, naturally in the 336 or any mirroring operation,

7 if you're mirroring a disk, if you have on disk A, a bunch of files, you know,

8 a.dat, b.dat, whatever it may be, and you've fully replicated that disk,

9 including its file system, if you will, then of course all of that stuff is going

10 to be repeated on the other side.

11   I believe the claims are clear that that's not what we're doing. We're

12 taking -- we're intercepting the write transactions issued to the storage disk.

13 We're making an exact copy of a series of write transactions, and we're

14 storing the exact copy within a series of files that are created on the file

15 system of the local storage system.

16   So that's a much different level of abstraction than what's going on in

17 the 336 patent or traditional mirroring. That's much lower in the layering, if

18 you will. They're just taking those bottom-level write transactions and

19 zipping them over to the other side. Whether they do it synchronously or

20 asynchronously, it doesn't matter. When they refer to asynchronous and

21 synchronous, it has to do with when you tell the host application that it's free

22 to do something else. That's not the issue. The issue is where it's occurring

23 and how those instructions are getting sent from point A to point B, and we

24 submit that it's a clearly different way that it's being done in the 336 patent,

25 as compared to what is currently in the claims.

1   JUDGE SAADAT: So the word intercepting doesn't mean it's at a

2   particular point that it's intercepting, because that's another --

3   MR. TOBIN: Well, the term -- we've gone over the term I/O

4   transaction, so necessarily, when we're talking about I/O transactions being

5   these disk-level transactional commands, you're necessarily performing that

6   interception at that -- it's a disk-level operation, is what we're talking about,

7   so --

8   JUDGE SAADAT: So it's right before it --

9   MR. TOBIN: I think your question may be geared at, you know, if I

10   say the write -- when I say copy my document.dat, is that a write transaction.

11   We believe that the record's clear that that's a higher level file system write

12   command and not the I/O transaction that is being referred to in the claim.

13   JUDGE SAADAT: So the reference, in your opinion, lacks that

14   interception or the type of write transaction?

15   MR. TOBIN: I think the -- where the Examiner's position breaks

16   down is in a couple of areas. Again, the Examiner is calling this data set.

17   He's calling this data set.

18   JUDGE SAADAT: Right.

19   MR. TOBIN: The exact copy of the write transactions that's getting

20   intercepted, retained and stored in the series of files. But, as I've mentioned,

21   even if the data set is composed of files, that's -- in the 336 patent, it's just

22   stuff stored on the disk. It does not mean that you're taking these write

23   transactions and putting them into special files.

24   Then there's another piece, where we say that the series of files, the

25   series of files that we've already said store the I/O transactions, are

26   transmitted from the local to the remote storage system. So if we're going

1   with the analogy of the Examiner, it breaks down again there, because the

2   data set itself is never transmitted from one side to the other. You'll end up

3   having a replication on the other side, but the data set is not itself sent over

4   the wire.

5   JUDGE WHITEHEAD: In Figure 1, it says the write command

6   transaction of the 336 patent. If it's -- I guess what I'm missing out, is if we

7   have exact mirror images, how is that data not being sent over to the remote

8   area?

9   MR. TOBIN: Ultimately, it is there. I mean, it's just the way that it's

10   getting there I think is how you have to view that, and it's being done in a

11   different fashion in Applicant's claim, as compared to the 336 patent.

12   If you -- you know, there's various ways to get from point A to point

13   B. I could take a train to Philadelphia or I could drive to Philadelphia. I

14   would end up in Philadelphia, but it's a totally different way of getting there.

15   And I think that the claims reflect distinctions over the way that the

16   mirroring has been performed in the 336 patent.

17   JUDGE WHITEHEAD: And let me see if I understand what you're

18   saying about Claim 1. So you have a series of write transactions issued to

19   said storage disk. You make an exact copy of those series of write

20   transactions. I'm looking at -- I'm sorry, I'm looking at Claim 1 of your

21   Brief. Okay. Now, so you're saying you set those in a separate file from

22   the so-called regular data?

23   MR. TOBIN: Correct. We're not just saying we're replicating a file.

24   All the mirroring is going to do that. We have this file that's used to

25   accommodate the operation. So we're intercepting the write transactions,

26   and then we're putting them in this file, and then we're moving that file and

1   other files over to the remote side in order to carry out the mirroring

2   operation.

3   JUDGE WHITEHEAD: Right, but the claim doesn't say that you're

4   making a separate file of the write transactions. It says you're making an

5   exact copy of the series of write transactions. Couldn't that be in the same

6   file as the other data?

7   MR. TOBIN: Okay. And we're talking about the results. The results

8   of the write transactions is not the same as the write transactions themselves.

9   So, if you're replicating a special file on the local disk onto the remote disk,

10   it does not necessarily entail, in and of itself, the write transactions

11   themselves. It's the result of a series of write transactions.

12   And, you know, by the way, when you're writing to a disk, you can

13   have one location that's written to, and, you know, you can change a zero to

14   a one, and then, for whatever reason, write over that and change it back to a

15   zero, change it back to a one again, change it back to a zero. Those are all

16   write transactions. The end net result is not necessarily even reflected in the

17   resultant storage block on the disk itself. Essentially, those write

18   transactions evaporate, unless you have a way of keeping track of it.

19   Now, conventional systems keep track of things, but they do it in a

20   different way from the way that's been claimed by Applicant.

21   JUDGE SAADAT: But if the reference transmits the write commands

22   or transaction --

23   JUDGE KRIVAK: Write transactions.

24   JUDGE SAADAT: -- yeah, write transactions, why wouldn't that be

25   the same as the claim transmission of write transactions? They are -- there is

26   a --

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1   MR. TOBIN: We are transmitting write transactions.

2   JUDGE SAADAT: Yes.

3   MR. TOBIN: But in a different vehicle.

4   JUDGE SAADAT: What is that vehicle? The file?

5   MR. TOBIN: The files.

6   JUDGE KRIVAK: The series of files?

7   MR. TOBIN: The series of files. The series of write transactions

8 within a file and then a compilation of a series of files, but, yes, write

9 transactions are going from point A to point B.

10   JUDGE SAADAT: So in -- you're suggesting that I should read your

11 claim to mean that a series of files is a particular vehicle that these write

12 transactions are transmitted with -- by?

13   MR. TOBIN: Correct. You could characterize it that way. And the

14 vehicle that we've provided is this series of files that are -- they're file system

15 files of the local storage system.

16   JUDGE SAADAT: A series of files that are created on a file system

17 of the local storage system?

18   MR. TOBIN: Correct. Now the file system is also a term of art and,

19 you know, the file system is the way that the files are organized on a

20 computer from the user-level perspective, if you would. This is not raw --

21 the files in the file system are not raw block data. It's at a lower level of

22 abstraction.

23   JUDGE SAADAT: I'm okay with that.

24   Do you have any other questions?

25   JUDGE WHITEHEAD: No, I'm good.

26   JUDGE SAADAT: Carla?

1   JUDGE KRIVAK: No more questions.

2   JUDGE SAADAT: If that's it, we are, I guess, clearly briefed then.

3   Thank you so much for your explanation.

4   MR. TOBIN: All right. Thank you for time and have a good day.

5   JUDGE WHITEHEAD: Thank you.

6   JUDGE KRIVAK: Thank you.

7   (Whereupon, the proceedings, at 11:43 a.m., were concluded.)